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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,621	03/28/2001	Somnath Viswanath	F0715	1699
45114	7590	03/16/2005	EXAMINER	
HARRITY & SNYDER, LLP 11240 WAPLES MILL ROAD SUITE 300 FAIRFAX, VA 22030			SHEW, JOHN	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/818,621	Applicant(s) VISWANATH ET AL.	
	Examiner John L Shew	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/18/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,8-11 and 13-19 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11192004, 01182005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-11, 13, 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Erimli et al.

Claim 1, Erimli teaches a network device configured to control communication of data frames between stations (Abstract lines 1-5) referenced by a multiport network switch determining transmission of copies of data frames to select ports, comprising a plurality of receive ports configured to receive data frames from the stations (Fig. 1, column 3 lines 33-47) referenced by the plurality of ports connected to network stations 14 and 22 for sending and receiving data, and data frame processing logic (Fig. 2, column 4 lines 65-67, column 5 lines 1-8) referenced by the internal decision making engine, configured to determine a priority associated with a received data frame (column 6 lines

50-56, column 15 lines 62-66) referenced by the reception of multicopy frames carrying a high priority over unicopy frames, and determine whether a location in an external memory is available for storing the data frame based on the priority of the received data frame (Fig. 9a, column 13 lines 19-23, lines 48-54, column 14 lines 49-62) referenced by the frame copy number determining zero-copy, unicopy or multicopy frame and allocation of external memory for the buffer header.

Claim 2, Erimli teaches the data frame processing logic is further configured to drop the data frame when a location in the external memory is not available (column 15 lines 23-26) referenced by the discarding of the frame when the overflow area of the external memory is full.

Claim 3, Erimli teaches the data frame processing logic is further configured to transfer the data frame to the external memory when a location in the external memory is available (Fig. 7, column 10 lines 48-67) referenced by allocating individual output queue overflows 128 which are in external memory.

Claim 8, Erimli teaches a network device that controls communication of data frames between stations (Abstract lines 1-5) referenced by a multiport network switch determining transmission of copies of data frames to select ports, a method comprising receiving data frames from the stations (Fig. 1, column 3 lines 33-47) referenced by the

plurality of ports connected to network stations 14 and 22 for sending and receiving data, determining a priority associated with a received data frame (column 6 lines 50-56, column 15 lines 62-66) referenced by the reception of multicopy frames carrying a high priority over unicopy frames, and determining based on the priority of the received data frame whether a location in an external memory is available for storing the data frame (Fig. 9a, column 13 lines 19-23, lines 48-54, column 14 lines 49-62) referenced by the frame copy number determining zero-copy, unicopy or multicopy frame and allocation of external memory for the buffer header.

Claim 9, Erimli teaches dropping the data frame when a location in the external memory is not available (column 15 lines 23-26) referenced by the discarding of the frame when the overflow area of the external memory is full.

Claim 10, Erimli teaches wherein dropping a data frame includes discarding the data frame and not forwarding the data frame to its intended destination (column 15 lines 23-26, column 1 lines 44-55) referenced by the discarding of the frame when the overflow area of the external memory is full wherein the discarding results in no transmission of the data frame.

Claim 11, Erimli teaches transferring the data frame to the external memory when a location in the external memory is available (Fig. 7, column 10 lines 48-67) referenced by allocating individual output queue overflows 128 which are in external memory.

Claim 13, Erimli teaches wherein when the priority of the received data frame is high the determining whether a location in the external memory is available includes accessing a first queue associated with high priority data frames (Fig. 6, Fig. 7, column 15, lines 62-66, column 18 lines 28-35) referenced by the multicopy frame output queue which is associated to a high priority followed by the availability of free buffer pool pointers to external memory, and determining whether an address in the first queue is available (Fig. 10, column 13 lines 25-47) referenced by the determination of the availability of buffers to output queues.

Claim 15, Erimli teaches a network device configured to control communications of data frames between stations (Abstract lines 1-5) referenced by a multiport network switch determining transmission of copies of data frames to select ports, comprising a plurality of receive ports configured to receive data frames from the stations (Fig. 1, column 3 lines 33-47) referenced by the plurality of ports connected to network stations 14 and 22 for sending and receiving data, a first queue associated with high priority data frames (Fig. 3, column 15 lines 62-66) referenced by the Multicopy Queue 90 which is a high priority queue, the first queue being configured to store pointers corresponding to addresses in an external memory (column 14 lines 16-24, lines 49-62) referenced by placement of frame pointers into the multicopy queue with the update of buffer headers

in external memory when the multicopy cache is full, a second queue associated with data frames having at least one of normal and low priority (Fig. 3, column 15 lines 62-66, column 13 lines 48-54) referenced by the Output Queue 74 for unicopy frames which is associated to normal and low priority in comparison to multicopy frames, the second queue being configured to store pointers corresponding to addresses in the external memory (column 7 lines 30-39, lines 56-64) referenced by placement of the frame pointer in the Output Queue 74 with overflow regions in external memory, and processing logic (Fig. 2, column 4 lines 65-67, column 5 lines 1-8) referenced by the multiport switch internal decision making engine, configured to determine a priority associated with a received data frame (column 6 lines 50-67) referenced by the determination of a multicopy high priority frame or a unicopy low priority frame, access one of the first and second queues based on the priority of the data frame (Fig. 3, column 7 lines 30-39, lines 56-64) referenced by the rules checker 42 determination of the appropriate output queues to place the frame pointer, determine whether a pointer is available in said accessed one of the first and second queues (Fig. 10, column 13 lines 25-47, lines 63-67, column 14 lines 1-24) referenced by the availability of buffers equating to the pointer availability with determination of copy number "1" for output queues or copy number ">1" for multicopy queues.

Claim 16, Erimli teaches wherein the processing logic is further configured to obtain a first pointer when a pointer is available in one of the first and second queues corresponding to the priority of the received frame (column 7 lines 56-64, column 11

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lines 15-24, column 13 lines 48-54, lines 63-67, column 14 lines 1-62) referenced by the buffer manager checking the multicopy queue which has higher priority for allocation of frame pointers followed by allocation to the output queues to which a copy must be sent, and transfer the data frame to the external memory at an address identified by the first pointer (column 14 lines 49-62) referenced by the update of the header in external memory when the multicopy cache is full.

Claim 17, Erimli teaches wherein the processing logic is further configured to drop the data frame when a pointer is not available in one of the first and second queues corresponding to the priority of the received data frame (column 15 lines 24-30) reference by the inability to place a frame pointer for a unicity forwarding to an output queue results in discarding of the frame.

Claim 18, Erimli teaches wherein the network device is configured to stop processing the dropped data frame and not forward the dropped data frame to its intended destination (column 15 lines 23-26, column 1 lines 44-55) referenced by the discarding of the frame when the overflow area of the external memory is full wherein the discarding results in no transmission of the data frame.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli et al. in view of Goss.

Claims 14, 19, Erimli teaches an apparatus for determining multicopy high priority from unicopy low priority frames and selectively discarding packets in output queues. Erimli does not teach mapping priority indicator to a number of priority levels. Goss teaches mapping a priority indicator received with the data frame to one of a number of priority levels supported by the network device (Fig. 3, column 1 lines 11-24, lines 35-47) referenced by the priority queues CBR, VBR and ABR with additional mapping to quality sublevels.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the subclass mapping of Goss to the selective packet discard apparatus of Erimli for the purpose of establishing thresholds for discarding of cells based on priorities.

Allowable Subject Matter

3. Claims 4, 5, 6, 7, 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Remarks

4. Applicant's arguments filed 01/18/2005 pertaining to claims 1, 8, 13, 14, 15-18, 19 have been fully considered but they are not persuasive. The arguments are respectfully traversed.

Claim 1 Erimli teaches (column 6 lines 50-56) that two basic types of frames enter the multiport switch, unicopy and multicopy, and further teaches (column 15 lines 62-66) a multicopy queue is a high priority queue. Thus the reception of a multicopy frame into the switch is associated to a priority. Erimli teaches determination of a multicopy frame (Fig. 9a, column 13 lines 19-23) by the Copy Number field of the Port Vector FIFO 70.

This number is used by the frame processing logic Buffer Manager 72 to make space in the Multicopy Cache 96 for new entries which is determination of available memory for storage. Erimli teaches when the multicopy cache is full (column 14 lines 49-62) the buffer manager 72 updates the buffer header in External Memory 36 which is the available memory of the multicopy queue. Thus the determination of the frame being a multicopy frame is associated to high priority to which available external memory for storage is determined.

Claim 8 recites features similar to those of claim 1 and the rejection is maintained for similar reasons.

Claim 13 Erimli teaches reception of a multicopy frame by the multiport switch (column 6 lines 50-56) is associated to a high priority (column 15 lines 62-66) as specified by the multicopy queue being a high priority queue. Erimli further teaches a first queue (Fig. 7) the Multicopy Queue Overflow 124 is located in external memory. Erimli teaches writing frame data to available memory buffers (Fig. 10, column 13 lines 25-47) wherein the memory are External Memory 36 inclusive of the Multicopy Queue Overflow memory 124.

Claim 15 recites features similar to those of claims 1 and 13 and the rejection is maintained for similar reasons.

The rejections of claims 16-18 are maintained as dependent on claim 15, wherein the rejection of claim 15 is maintained.

The rejection of claims 14 is maintained as dependent on claim 8, wherein the rejection of claim 8 is maintained.

The rejection of claim 19 is maintained as dependent on claim 15, wherein the rejection of claim 19 is maintained.

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Shew whose telephone number is 571-272-3137. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

js

A handwritten signature in black ink, appearing to read 'Wellington Chin', with a long horizontal line extending to the right.